

MASSACHUSETTS WATER RESOURCES COMMISSION

Hydrologic Conditions in Massachusetts

September 2015 Summary



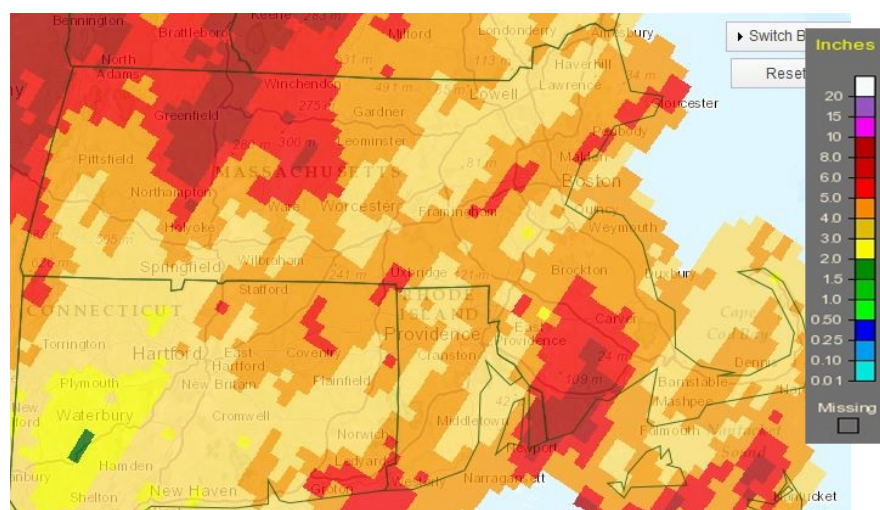
- September precipitation was near normal for all regions.
- September streamflows were below normal for the Central, Northeast, & Southeast regions and normal for the remaining regions.
- September groundwater levels were normal in all regions.
- September reservoir levels were normal.

PRECIPITATION CONDITIONS

Summary: September precipitation was near normal for all regions.

Region	September Estimated Rainfall: Composite Sites Reporting (inches)	Departure from Normal (inches)	MA Drought Management Plan Levels		Key to Levels
			Standardized Precipitation Index	Percent of Normal Index	
Cape Cod & Islands	3.41	-0.16	6-mos	6-mos	Advisory
Central	4.01	+0.09	Normal	Normal	Watch
Connecticut River	4.32	+0.28	Normal	Normal	Warning
Northeast	4.18	+0.62	Normal	Normal	Emergency
Southeast	3.73	-0.09	Normal	Normal	
Western	4.07	-0.11	Normal	Normal	

Sep 2015 Total Observed Rainfall from National Weather Service
found at <http://water.weather.gov/precip/> estimated from radar data correlated to NWS rainfall gauge reports



Weather Events of Note

Source: NWS Taunton E-5 Report

September 2015 brought dry and warm conditions to southern New England. The biggest exception to the mainly dry conditions was the last day of the month, when a slow moving cold front with tropical moisture produced over half of the month's rainfall... During the 30th, a widespread 2 to 4 inches of rain fell across southern New England. Higher rainfall totals were reported across the east slopes of the Berkshires in western Massachusetts, with event totals ranging from 3 to 5.6 inches. Small stream flooding occurred in that area as a result of those rains... Another area that experienced higher rainfall totals included a portion of the Boston Metro area, in particular from Framingham eastward to Natick to Watertown. This area had between 4 and 4.7 inches of rainfall. ... Portions of south coastal Massachusetts had 3 to 4 inches of rain, with 1 to 2 inches falling within 2 hours. This resulted in urban flooding in the area.

STREAMFLOW CONDITIONS

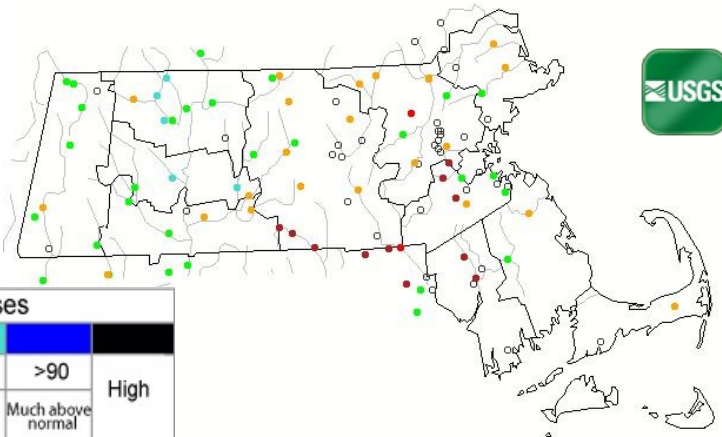
Summary: September streamflow conditions were normal except for the Central, Northeast, and Southeast regions.

General Streamflow Conditions in Massachusetts September 2015			
Region	September Streamflow Conditions	MA Drought Management Plan Streamflow Index	
Cape Cod & Islands	ND	Normal	Key to Levels
Central	Below Normal	Advisory	Normal
Connecticut River	Normal	Normal	Advisory
Northeast	Below Normal	Normal	Watch
Southeast	Below Normal	Normal	Warning
Western	Normal	Normal	Emergency

Note: Streamflow conditions for individual streamflow-gaging stations may differ from general conditions.
ND, no data

Average September 2015 streamflow monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program. See map at right found at: <http://waterwatch.usgs.gov/new/index.php?m=mv01d&r=ma&w=map>

September 2015 Monthly Streamflow Compared to Historical September Streamflow

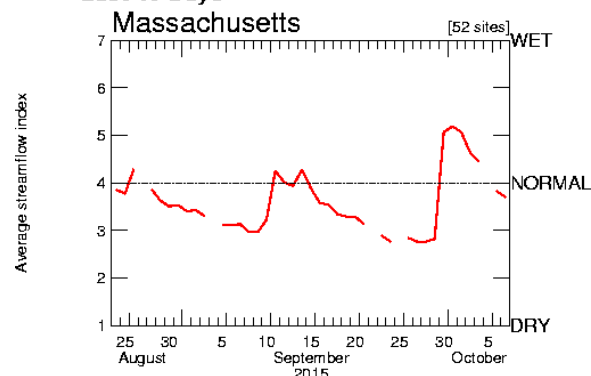


Time Series Plot of Real-Time Streamflow Compared to Historical Streamflow for the Day of the Year

This graph depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the 45-day period of August 23 to October 6, 2015. An updated summary plot may be found at: <http://waterwatch.usgs.gov/index.php>



Last 45 Days



KEY:

- 1 = New record low for day
- 2 = < 10th percentile
- 3 = 10th – 24th percentile
- 4 = 25th – 74th percentile
- 5 = 75th – 89th percentile
- 6 = 90th percentile
- 7 = New record high for day

GROUNDWATER LEVELS

Summary: September groundwater levels were normal.

General Groundwater Conditions in Massachusetts at the end of September 2015

Region	Groundwater Conditions	MA Drought Plan Groundwater Index
Cape Cod & Islands	Normal	Normal
Central	Normal	Normal
Connecticut River	Normal	Normal
Northeast	Normal	Normal
Southeast	Normal	Normal
Western	Normal	Normal

Note: Groundwater conditions for individual wells may differ from general conditions. ND, no data

September 2015 Groundwater Conditions

The USGS Groundwater Conditions for the end of September 2015 can be viewed at the web site: http://ma.water.usgs.gov/water_statement/2015_09/index.html



RESERVOIR LEVELS

Summary: September reservoir levels were normal across all regions of the state based on percent full values, as reported by participating water suppliers.

General Reservoir Levels in Massachusetts at the end of September 2015

Region	Reservoir Level	MA Drought Management Plan Reservoir Index
Cape Cod & Islands	Normal	Normal
Central	Normal	Normal
Connecticut River	Normal	Normal
Northeast	Normal	Normal
Southeast	Normal	Normal
Western	Normal	Normal

NWS/NOAA DROUGHT OUTLOOK AND FORECAST

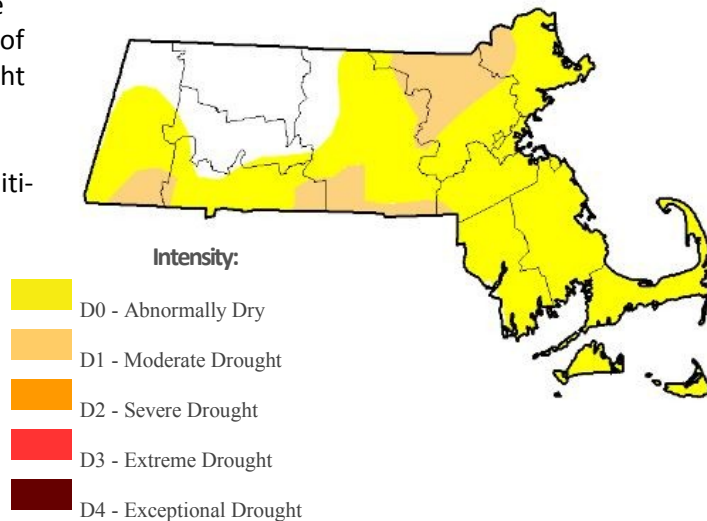
U.S. Drought Monitor: Massachusetts October 6, 2015

Summary: As of October 6, 2015, the U.S. Drought Monitor shows regions of abnormally dry and moderate drought conditions in Massachusetts.

Produced by the National Drought Mitigation Center (NDMC). Intensity based on NDMC criteria.

For updated map see:

<http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?MA>



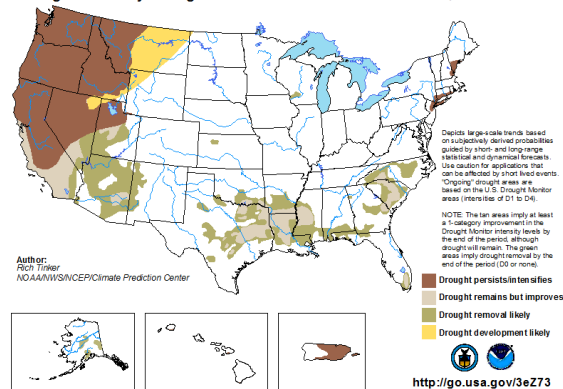
Seasonal Drought Outlook Released September 17, 2015; valid through December 31, 2015

The NOAA Seasonal Drought Outlook (September 17, 2015) indicates no tendency of drought development (D1 or worse) likely through December 31, 2015 for Massachusetts.

- Drought persists/intensifies
- Drought remains but improves
- Drought removal likely
- Drought development likely



U.S. Seasonal Drought Outlook Valid for September 17 - December 31, 2015
Drought Tendency During the Valid Period Released September 17, 2015



NOAA NATIONAL WEATHER SERVICE CLIMATE PREDICTION CENTER

The Climate Prediction Center October 6th forecast shows above normal temperature and above normal precipitation in the Massachusetts region through October 20, 2015. (<http://www.cpc.noaa.gov/products/predictions/610day/>). The Center's September 17th three-month outlook for October, November, and December 2015 shows above normal temperatures and no signal for precipitation anomaly. (http://www.cpc.noaa.gov/products/predictions/long_range/seasonal.php?lead=1). More information is available at (<http://www.cpc.noaa.gov/index.php>).

Key Links: Massachusetts Drought Management Plan: <http://www.mass.gov/eea/docs/eea/wrc/droughtplan.pdf>

October 8, 2015: This report was prepared by the Massachusetts Department of Conservation and Recreation. Data may be preliminary in nature. Additional information, previous and future water conditions reports can be found on our web site:

<http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/precipitation-composite-current-conditions.html>